

Didissandra and Allied Genera in China and N. India.

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COLLECTIONS of herbarium specimens received here of recent years from China, and more especially the large collections made by Mr. Geo. Forrest in S.W. China, show that in *Didissandra* as at present understood there are several very well-marked and easily recognised groups.

The genus *Didissandra* was created by C. B. Clarke * for the reception of plants which, while agreeing in general with *Didymocarpus*, differed from that genus in having four fertile stamens the anthers of which were coherent in pairs. And this definition has more or less held good since that time. No attention whatever was paid to other characters, the result being, as already indicated, that the genus has become at the present time a collection of sharply defined groups. The present paper is the result of an attempt to segregate and define those groups.

In his original account * of the genus Clarke enumerates seven species. Of these six come from the Malayan region and one is recorded from the Himalayas, Khasia, and N. China. In recent years the number of species from the Malayan region has been considerably augmented, and I believe they constitute a group quite distinct from the Himalayan species and, as genera go in Gesneraceae, well worthy generic rank. Since then in my opinion Clarke included more than one genus in his *Didissandra*, it becomes necessary to delimit the genus. For this purpose I have taken as the type of the true *Didissandra* the first species enumerated by Clarke, viz. *D. lanuginosa*.

By taking *D. lanuginosa* as the type of a restricted *Didissandra* and by excluding from it the Malayan lower level species we obtain a very natural series of higher level species, natives of the Himalayas, S.W. China, and Upper Burma. Uniformity in habit is accompanied by several marked characters which enable us to delimit the group very sharply. All are perennial herbs with a thick woody rhizome, with the leaves arranged in basal

* C. B. Clarke in DC. Monog. Phan., v, 65 (1883).

rosette which, in the young stage at least, is nearly always dense. In a few species stolons are present and the flat rosette is somewhat modified. No stem is developed above ground. Each plant bears several peduncles, erect or ascending, sometimes 1-flowered but usually bearing several or many flowers, arranged in a more or less umbelliform manner. Bracts are wanting. The calyx is always divided practically to the base into five segments. The corolla is medium-sized or small, the tube cylindrical, not inflated upwards, and the limb is always bilabiate with the posticous lip shorter than the anticous. Externally the corolla tube is glabrous. Internally the tube is pilose on the anterior side, the hairs, rather thick, being arranged in two rows which alternate with the lobes and which run from the top of the tube to about the insertion of the filaments. And again these hairs arise in groups from tubercled protuberances. Internally on the posterior side the tube is glabrous. The anther cells diverge, the lines of dehiscence becoming soon confluent, their course being at right angles to the filament. After the pollen is shed the anthers are drawn back nearly to the base of the corolla tube by the filaments coiling spirally. The inner face of the placental lamellae is conspicuously hairy—a character well seen in the fruit. The floral characters, and more especially the distribution of the hairs on the inside of the corolla, the structure and method of opening of the anthers and the retracting of the anthers by the spiral coiling of the filaments serve as absolute distinguishing marks of the genus *Didissandra* as understood by me.

The remaining Chinese plants which have been referred to the genus *Didissandra* at various times it is proposed to distribute among three new genera: *Briggsia*, *Ancylostemon*, and *Isometrum*. Characters by which the restricted *Didissandra* may be distinguished from these new genera have already been pointed out.

Of the three new genera *Briggsia* may be easily recognised by the large corolla, ventricose at or just above the middle, and by the gradual inarching of the filaments. In the other two genera the corolla is medium-sized (in *Ancylostemon* slightly ventricose, in *Isometrum* not ventricose), and the filaments are straight throughout practically their whole length, the pairs of anthers being brought into contact by practically a right-angle bend just at the apex of the filament. As regards *Isometrum*, it can be recognised from *Didissandra*, *Briggsia*, and *Ancylostemon* by the spreading corolla limb, which is composed of five almost equal lobes. In the other three genera the limb is most distinctly bilabiate.

Species in cultivation.—Of the species enumerated there are, so far as I am aware, only five in cultivation. *Isometrum Farreri*

was introduced a few years ago by Mr. R. G. Farrer, but unfortunately under a wrong name, viz. *Oreocharis Henryana*. The latter plant is a true *Oreocharis*, i.e. the four anthers are free and not coherent in pairs, whereas Farrer's plant has the four anthers cohering in pairs. Farrer collected his plant in S. Kansu.

The remaining four species have been introduced into this country through Mr. George Forrest, who collected seeds of them in Yunnan. The genus *Didissandra* is represented by one species—*D. sericea*, and the genus *Briggsia* by three species—*B. Agnesiae*, *B. longifolia*, and *B. muscicola*. Of these the last two have not yet flowered here. *Didissandra sericea* and *Briggsia Agnesiae* both flowered here this year. The latter is, I think, one of the most charming of the plants of recent introduction.

KEY TO THE GENERA.

- Anther cells divergent, dehiscing lines confluent, at right angles to filament; corolla small to medium-sized, with stoutish unicellular hairs arranged in two more or less well-defined rows alternate with the lobes of the anticus lip and extending well down the tube, glabrous posticously; anthers finally withdrawn well down the corolla tube by the filaments coiling spirally; inner surface of placental lamellae conspicuously hairy *Didissandra*.
- Anther cells and their lines of dehiscence more or less parallel to the filament; corolla large to medium-sized; hairs inside corolla not arranged in rows; filaments not spirally retracted; inner face of placental lamellae glabrous or with very few inconspicuous hairs.
- Anthers brought into contact by the gradual inarching of the filaments; corolla tube markedly inflated anticusly; posticous lip distinctly lobed *Briggsia*.
- Anthers brought into contact by a right-angle bend at apex of filaments; posticous lip lobed, emarginate or subentire.
- Corolla limb distinctly bilabiate, not patent, tube usually slightly inflated about the middle or slightly above the middle *Ancylostemon*.
- Corolla limb of 5 subequal lobes, only very slightly bilabiate, spreading, tube not inflated *Isoetrum*.

ENUMERATION OF SPECIES.

Didissandra, C. B. Clarke.

- Outer leaves 6–8.5 cm. long, lanceolate to ovate-lanceolate, soon quite glabrous above, nerves 4–6 pair, more or less impressed on the upper surface.
- Lower surface of leaf ultimately lanate only on midrib and nerves; inflorescence soon glabrous 1. *patens*.
- Lower surface of leaf persistently cinnamomeous or ultimately silvery lanate; indumentum on peduncle, pedicels and outside of calyx persistent.
- Corolla up to 13 mm. long 2. *Kingiana*.
- Corolla 18 mm. long 3. *grandis*.

Leaves not exceeding 5.5 cm. long ; lateral nerves 3-5 pair (mostly 3-4 pair).

Peduncles 1-flowered ; stolons present ; leaves lanceolate to spathulate, 5-8 mm. long, glabrous above, at first cinnamomeo-lanate on nerves below, ultimately glabrous ; nerves mostly obscure on both surfaces 4. *Cooperi*.

Peduncles very rarely 1-flowered ; stolons wanting in majority ; leaves at least 1 cm. long ; nerves never obscure on both surfaces, usually impressed above and prominent below.

Leaves glabrous on upper surface or with a few long white hairs more or less persisting on midrib, below densely cinnamomeo-arachnoid or lanate only on the nerves and glabrous or with only an occasional hair on the spaces between the nerves, not closely and deeply plicate.

Stolons present ; leaves spathulate to elliptic or ovate, cuneate at base, usually shallowly and rather distantly crenate-serrate ; nerves obscure or slightly impressed above 5. *taliensis*.

Stolons wanting ; leaves elliptic to ovate, cuneate to cordulate at base, crenate ; nerves impressed above 6. *cordatula*.

Leaves not glabrous on the upper surface, or if glabrous then not glabrous on the lower surface between the nerves or in addition closely and deeply plicate.

Leaf margin entire or subentire.

Leaves up to 20 mm. long and 13 mm. broad, nerves nearly always impressed above ; stolons present ; capsule up to 16 mm. long 7. *bhutanica*.

Leaves up to 35 mm. long and 24 mm. broad, nerves rarely impressed above ; stolons wanting ; capsule up to 20 mm. long 8. *lanuginosa*.

Leaf margin variously crenate.

Leaves lanceolate to oblanceolate, closely regularly plicate or coarsely and rigidly bullate on upper surface, which is soon glabrescent.

Leaves regularly plicate, peduncle glabrous or glabrescent.

Peduncle quite glabrous ; corolla 1-2 cm. long ; capsule 2 cm. long 9. *plicata*.

Peduncle glabrescent ; corolla less than 1 cm. long ; capsule up to 12 mm. long 10. *lineata*.

Leaves coarsely and rigidly bullate above ; peduncle even in fruit more or less cinnamomeo-lanate 11. *bullata*.

Leaves not lanceolate, or if approaching lanceolate then not glabrous above, not closely plicate or bullate above.

Corolla yellow ; leaves obovate to obovate-spathulate, soon glabrescent above unless towards the base 12. *lutea*.

Corolla blue, blue and white, or white.

Leaves persistently sericeous above.

Corolla tube over 7 mm. long ; leaves oblong- to lanceolate-ovate 13. *sericea*.

Corolla tube under 6 mm. long ; leaves tending to flabelliform.

Corolla tube not densely barbate anticously at apex ; peduncle not glabrous at flowering time 14. *flabellata*.

Corolla tube densely barbate anticously at apex;
peduncle nearly glabrous at flowering time.

15. *mengtzeana*.

Leaves more or less glabrescent, never sericeous at
maturity. 16. *Labordei*.

1. ***D. patens***, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 247 (1919).

Yunnan. Mountains in N.E. of Yangtze bend. Lat. $27^{\circ} 45' N$. Faces of cliffs and boulders, 10,000–11,000 ft. Plant of 6 inches. Flowers very pale blue, almost white. G. Forrest, 10,698! Fl. et Fr. Aug. 1913.

2. ***D. Kingiana***, Craib, nom. nov.

D. rufa, King ex Hook. f. in Hook., Ic. Pl., t. 1437; C. B. Clarke in Hook. f., Fl. Brit. Ind., iv, p. 355, non C. B. Clarke in DC. Monog. Phan.

E. Tibet. Chumbi, 12,000 ft. King's Collector.

3. ***D. grandis***, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 244 (1919).

Yunnan. Mountains of the Chungtien plateau. Lat. $27^{\circ} 55' N$. Alt. 10,000 ft. On dry shady rocks. Flowers blue and white. G. Forrest, 10,855! Fl. Aug. 1913.

Mekong-Yangtze divide, Kari Pass. Lat. $27^{\circ} 40' N$. Alt. 11,000 ft. Open shady dry rocks. Plant of 10 inches. Flowers purple-blue and white. G. Forrest, 12,924! Fl. Aug. 1914.

The three species enumerated above form a well-marked group easily recognised from all the other species by their large leaves.

4. ***D. Cooperi***, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 241 (1919).

D. lanuginosa, C. B. Clarke in Hook. f., Fl. Brit. Ind., iv, p. 355, quoad pl. bhutanicam.

Bhutan. Dotena Timpu, 8000 ft., Cooper, 2508/a! Bhutan, Griffith, K.D. 3835! pro parte.

5. ***D. taliensis***, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 249 (1919).

Yunnan. Western flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 10,000 ft. On rocks and cliffs in dry situations. Flowers deep purplish-blue. G. Forrest, 11,536! Fl. Aug. 1913.

forma ***robusta***, Craib, l.c., p. 250.

Yunnan. Eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 8000–10,000 ft. On the faces of cliffs and on humus-covered boulders. Plant of 3–6 inches. Flowers blue, tipped white. G. Forrest, 6910! Fl. Aug. 1910.

6. *D. cordatula*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 242 (1919).
W. Hupeh, Wilson, 2170! Fl. et Fr. June 1900.

7. *D. bhutanica*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 240 (1919).
Bhutan. Tilagong Timpu, in crevices of rock, 6000 ft., R. E. Cooper, 2637! Dotena Timpu, on sloping rock faces, 8000 ft., flowers blue, R. E. Cooper, 2508! Chukha Timpu, in crevices of rock, 4400 ft., flowers blue, R. E. Cooper, 1244!

8. *D. lanuginosa*, C. B. Clarke in DC. Monog. Phan., v, p. 66 (1883), pro parte; id. in Hook. f., Fl. Brit. Ind., iv, p. 355, pro parte.
Didymocarpus lanuginosa, Wall. ex DC. Prodr., ix, p. 268;
C. B. Clarke, Comm. et Cyrt. Beng., t. 67, saltem pro parte.
N.W. Himalaya. Kumaon, below Naini, 4500 ft., damp rocks, J. R. Reid! Bashahr, Manglad Valley, 5000 ft., Lace, 1057! Ushan Valley, 4500 ft., G. Watt!
I have seen no specimens except from the Himalayas which I can refer to true *D. lanuginosa*.

9. *D. plicata*, Franchet in Bull. Soc. Linn. Par., n.s. i, p. 123 (1899).
Yunnan. Tapintze, Mt. Ma-eul-chan, above Hokim-tcheou, 2500 m., in fissures of limestone. Delavay, 3837.

10. *D. lineata*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 245 (1919).
Yunnan. Mountains of the Chungtien plateau. Lat. 27° 55' N. Alt. 10,000 ft. On dry limestone rocks and cliffs. Plant of 3-4 inches. Flowers deep blue. G. Forrest, 10,790! Fl. et Fr. Aug. 1913.

11. *D. bullata*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 240 (1919).
D. lanuginosa, Lév., Cat. Pl. Yunnan, p. 123, pro parte, *vix* C. B. Clarke.
Yunnan. Tong-tchouan, 2600 m., Maire! Fl. July-Aug. Ma-ngau-chan, on rocks, 2550 m., Maire, 212! 214!

12. *D. lutea*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 246 (1919).
Yunnan. Bei-ma Shan, Mekong-Yangtze divide. Lat. 28° 30' N. Alt. 11,000-12,000 ft. On cliffs and boulders in open situations. Plant of 2-5 inches. Flowers pale yellow. G. Forrest, 13,197! Fl. Aug. 1914.

13. *D. sericea*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 248 (1919).

Yunnan. Eastern flank of the Lichiang Range. Lat. $27^{\circ} 30' N$. Alt. 10,000–12,000 ft. On rocks and faces of cliffs. Plant of 2–6 inches. Flowers blue. G. Forrest, 6039! Fl. et Fr. June 1910.

Eastern flank of the Lichiang Range. Lat. $27^{\circ} 12' N$. Alt. 9000–11,000 ft. Dry open situations on rocks and faces of cliffs. Plant of 3–6 inches. Flowers rich blue. G. Forrest, 2509! Fl. July 1906.

Cult. Hort. Bot. Reg. Edin. ubi floruit June 1919!

14. *D. flabellata*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 243 (1919).

D. lanuginosa, C. B. Clarke, var. *flabellata*, Franchet ex Diels in Notes Roy. Bot. Gard. Edin., vii, p. 271.

Yunnan. Eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 8000–10,000 ft. Faces of cliffs and on humus-covered boulders. Plant of 2–6 inches. Flowers dark blue. G. Forrest, 7129! Fl. Aug. 1910.

Eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 7000–9000 ft. Open dry situations on rocks and cliffs. Plant of 2–6 inches. Flowers deep blue or blue and white. G. Forrest, 4804! Fl. June–Sept. 1906.

15. *D. mengtzeana*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 247 (1919).

Yunnan. Mengtze, on rocks, 4700 ft., blue flowers, Henry, 9190! et on rocks, also on earthy banks, 4600–5000 ft., purple-blue flowers, Henry, 9190!

16. *D. Labordei*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 245 (1919).

D. lanuginosa, Lévl., Fl. du Kouy-Tcheou, p. 182, *vix* C. B. Clarke.

Kouy-Tcheou. Tsin-gay, Laborde et Bodinier, 1637 bis! Gan-pin, Martin et Bodinier, 1637! Gan chouen, Cavalerie, 3121!

Briggsia, Craib.

Leaves glabrous or in the young stage puberulous, narrowly peltate; acaulescent.

Calyx segments 9 mm. long; corolla 5–6 cm. long 1. *longipes*.

Calyx segments up to 7 mm. long.

Corolla 5 cm. long 2. *Mihieri*.

Corolla up to 3.5 cm. long 3. *Fritschii*.

Leaves never glabrous.

Distinct stem present.

Leaf margin serrate, undersurface with few scattered hairs on midrib and nerves; calyx 1 cm. or more long 4. *amabilis*.

- Leaf margin crenulate, undersurface puberulous with mostly capitate hairs; calyx about 6 mm. long . . . 5. *Cavaleriei*.
 Stemless.
 Corolla with a spur-like projection on the inside near the base of each of the anticonic filaments . . . 6. *Agnesiae*.
 Corolla without such appendages . . .
 Corolla lobes denticulate at the apex . . . 7. *pinfaensis*.
 Corolla lobes not denticulate.
 Leaf margin entire . . . 8. *Beauverdiana*.
 Leaf margin not entire.
 Leaves elongate, lanceolate to oblong-spathulate.
 Corolla 5 cm. long . . . 9. *speciosa*.
 Corolla up to 3.5 cm. long
 Leaf indumentum consisting of white hairs 10. *longifolia*.
 Undersurface of leaf with both white and brown hairs .
 . . . 11. *musciola*.
 Leaves oblong, elliptic or ovate.
 Petiole shorter than lamina; hairs on upper surface of leaf arising from cushion-like projections . . . 12. *Forrestii*.
 Petiole at least of outer leaves longer than the lamina; hairs on upper surface of leaf not on such projections.
 Leaves cordulate at base . . . 13. *Mairei*.
 Leaves cuneate at base . . . 14. *elegantissima*.

1. **B. longipes**, Craib, comb. nov.

Didissandra longipes, Hemsl. ex Oliver in Hook., Ic. Pl., t. 2379 (1895); Hemsl. in Kew Bull., 1895, p. 115; Lév., Cat. Pl. Yunnan, p. 123.

Yunnan. Mengtze, in crevices of shady rocks in a dark limestone glen. Hancock, 50.

2. **B. Mihieri**, Craib, comb. nov.

Didissandra Mihieri, Franchet in Bull. Mens. Soc. Linn. Par., 1885, p. 450; Lév., Fl. Kouy-Tcheou, p. 182, pro parte.

Didymocarpus Mihieri, Lév. in Compte Rend. Ass. Fr. (1905), 1906, p. 427.

Kouy-Tcheou, Perry, 1858; Gan-pin, Martin et Bodinier, 1816! Fl. 17-20 Sept.

3. **B. Fritschii**, Craib, comb. nov.

Didissandra Fritschii, Lév. et Van. in Compte Rend. Ass. Fr. (1905), 1906, p. 425.

D. Mihieri, Lév., Fl. Kouy-Tcheou, p. 182, pro parte.

Chirita Fauriei, Lév., l.c., p. 181, pro parte, *vix* Franchet.

Didymocarpus Fritschii, Lév. in Compte Rend. Ass. Fr. (1905), 1906, p. 428.

Kouy-Tcheou, Esquirol, 583! Tsin-gay, Laborde et Bodinier, 2464!

In his Flore du Kouy-Tcheou Lévillé reduced his *Didissandra Fritschii* to Franchet's earlier species *D. Mihieri*. Little more than the types is known of these two species, and they differ so markedly in floral dimensions that for the present I prefer to enumerate them as distinct.

4. **B. amabilis**, Craib, comb. nov.

Didissandra amabilis, Diels in Notes Roy. Bot. Gard. Edin., v, p. 224 (1912), pro parte; Lévl., Cat. Pl. Yunnan, p. 123.

Yunnan. Eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10,000–11,000 ft. Moist moss-covered ledges and crevices of cliffs. Plant of 6–9 inches. Flowers light yellow, spotted purple. G. Forrest, 2689! Fl. Aug. 1906.

var. **taliensis**, Craib, var. nov., corolla paulo brevior latiore aurantiaco-vel aurantiaco-brunneo-maculata, caulis indumento sparsiore, foliis tenuioribus cognoscenda.

Didissandra amabilis, Diels in Notes Roy. Bot. Gard. Edin., v, p. 224 (1912), pro parte.

Yunnan. Eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9000–10,000 ft. On trees and humus-covered boulders in shady situations in side valleys. Plant of 6–12 inches. Flowers orange-yellow, spotted orange-brown. G. Forrest, 4385! Fl. July-Aug. 1906.

Ibid. Flowers deep yellow, spotted orange. G. Forrest, 6893! Fl. July 1910.

5. **B. Cavaleriei**, Craib, comb. nov.

Didissandra Cavaleriei, Lévl. et Van. in Compte Rend. Ass. Fr. (1905), 1906, p. 425.

Chirita sphagnicola, Lévl., Fl. Kouy-Tcheou, p. 182, quoad spec. infra citatum, *haud* Lévl. et Van.

Didymocarpus Cavaleriei, Lévl. in Compte Rend. Ass. Fr. (1905), 1906, p. 427.

Kouy-Tcheou, Esquirol, 646! Fl. Aug. 1905; Pin-Fa, Cavalerie, 239! Fl. Aug. 1902.

Lévillé in his Flore du Kouy-Tcheou reduced his *Didissandra Cavaleriei*, which is a true *Didissandra* (in the wide sense), to *Chirita sphagnicola*, which is a true *Chirita*.

6. **B. Agnesiae**, Craib, comb. nov.

Didissandra Agnesiae, G. Forrest in Notes Roy. Bot. Gard. Edin., viii, p. 334 (1915); Lévl., Cat. Pl. Yunnan, p. 123.

Yunnan. Mountains of the Yung Peh. Lat. 26° 40' N. Alt. 9000–10,000 ft. Plant of 2–4 inches. Flowers deep crimson.

Open dry situations on rocks and cliffs. G. Forrest, 12,829 !
Fl. July 1914.

Cult. Hort. Bot. Reg. Edin. ubi floruit July 1919 !

7. **B. pinfaensis**, Craib, comb. nov.

Didissandra pinfaensis, Lévl. in Fedde Rep. Nov. Sp., ix,
p. 328 (1911).

D. elegantissima, Lévl., Fl. Kouy-Tcheou, p. 182, quoad
syn. vix Lévl. et Van.

Kouy-Tcheou, Pin-Fa, Cavalerie, 3315 !

8. **B. Beauverdiana**, Craib, comb. nov.

Didissandra Beauverdiana, Lévl. in Fedde Rep. Nov. Sp., ix,
p. 328 (1911) ; Lévl., Cat. Pl. Yunnan, p. 123.

Yunnan. Tchen-Fong-Chan, Delavay, 5029, 5085.

9. **B. speciosa**, Craib, comb. nov.

Didissandra speciosa, Hemsl. in Journ. Linn. Soc., xxvi,
p. 228 (1890).

Didymocarpus speciosa, Lévl. in Compte Rend. Ass. Fr.
(1905), 1906, p. 428.

Hupei. Patung, Nanto, Hsingshan, and Tunghu, mostly on
faces of perpendicular cliffs. Henry.

10. **B. longifolia**, Craib in Notes Roy. Bot. Gard. Edin., xi,
p. 238 (1919).

Yunnan. Western flank of the Shweli-Salwin divide. Lat.
25° 20' N. Alt. 10,000 ft. Plant of 6-12 inches. Flowers deep
orange. On ledges of cliffs and on humus-covered boulders.
G. Forrest, 8984 ! Fl. et Fr. Aug. 1912. G. Forrest, 15,828 !
Fl. et Fr. Aug. 1917.

Shweli-Salwin divide. Lat. 25° 30' N. Alt. 8000 ft. On
trees and rocks in shady side valleys. Plant of 6-10 inches.
Flowers yellow, flushed deep purple-crimson at margins. G.
Forrest, 17,619 ! Fl. et Fr. July-Aug. 1918.

Shweli-Salwin divide. Lat. 25° 20' N. Alt. 9000 ft. Shady
dry situations on rocks and in thickets. Flowers deep yellow
with darker markings. G. Forrest, 11,988 ! Fl. Aug. 1913.

11. **B. muscicola**, Craib, comb. nov.

Didissandra muscicola, Diels in Notes Roy. Bot. Gard. Edin.,
v, p. 225 (1912).

Yunnan. Mekong-Salwin divide. Lat. 27° 30' N. Alt.
7000-8000 ft. On moss-covered boulders and trees in shady

rhododendron forest, in side valleys of the Mekong. Plant of 6-12 inches. Flowers deep orange. G. Forrest, 5095! Fl. et Fr. July 1905.

Mekong-Salwin divide. Lat. $28^{\circ} 12'$ N. Alt. 10,000 ft. Shady situations on rocks and trees in side valleys. Plant of 12 inches. Flowers pale orange-yellow with brown markings. G. Forrest, 14,189! Fl. and Fr. July 1917. G. Forrest, 14,967! Fr. Sept. 1917.

Mekong-Salwin divide. Doker La. Lat. $28^{\circ} 20'$ N. Alt. 10,000 ft. In shady forests, on trunks of trees. Plant of 6-10 inches. Flowers deep orange, spotted dull purple. G. Forrest, 16,879! Fl. Aug. 1918. G. Forrest, 17,262! Fr. Oct. 1918.

12. **B. Forrestii**, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 237 (1919).

Yunnan. Shweli-Salwin divide. Lat. $25^{\circ} 30'$ N. Alt. 8000-10,000 ft. Moist shady moss-covered rocks. Plant of 4-7 inches. Flowers pale rosy-purple, lined deeper, with a tinge of yellow on lip. G. Forrest, 16,096! Fl. et Fr. Sept. 1917. G. Forrest, 17,552! Fl. et Fr. June 1918.

Shweli Valley. Lat. $24^{\circ} 50'$ N. Alt. 5000-6000 ft. On trees and rocks in shady situations. Plant of 3-6 inches. G. Forrest, 7985! Fr. May 1912.

To this species may also belong Ward, 1888, from Upper Burma. Flrs. purple, throat of corolla striped and mottled with white on lower half. On wet rock slabs, in deep shade of forest and gullies or in river bed. Valley of Naung-chaung.

13. **B. Mairei**, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 239 (1919).

Didissandra saxatilis, Lévl., Cat. Pl. Yunnan, p. 123, et fig. 26, p. 124, non Hemsl.

Yunnan. Tong-tchouan, 2600-2700 m., Maire, 210! 213! 285! 7455! et sine num.! Ta-hai, 3000 m., Maire!

14. **B. elegantissima**, Craib, comb. nov.

Didissandra elegantissima, Lévl. et Van. in Compte Rend. Ass. Fr. (1905), 1906, p. 425; Lévl., Fl. Kouy-Tcheou, p. 182, excl. syn.

Didymocarpus elegantissima, Lévl. in Compte Rend. Ass. Fr. (1905), 1906, p. 428.

Kouy-Tcheou, Pin-Fa, Cavalerie, 239! Ton-chan, Cavalerie, 2686!

Under number 2686 are two specimens, on each of which

there is only one open flower. In the dry state these two corollas differ considerably in the length of the posticous lip—the corolla of the smaller plant has a much shorter posticous lip than that of the larger.

Ancylostemon, Craib.

Peduncles cinnamomeo-lanate, midrib and nerves on undersurface of leaves densely cinnamomeo-lanate, the hairs soon becoming agglutinated 1. *notochlaena*.

Peduncles as also midrib and nerves of undersurface of leaf with long spreading brown hairs (in addition to shorter pale ones).

Ovary densely covered with short hairs 2. *saxatile*.

Ovary glabrous or with a few scattered hairs.

Calyx at flowering time 11 mm. long; posticous lip of corolla with concave or straight sides, thickened at apex and slightly lobulate 3. *concevum*.

Calyx at flowering time not over 7 mm. long; posticous lip subentire, emarginate or distinctly lobed, not thickened at apex.

Leaves membranous, with a thin coating of white hairs on both surfaces in addition to longer brown ones 4. *convexum*.

Leaves rigidly chartaceous, with a dense coating of white hairs on both surfaces in addition to longer brown ones 5. *Mairei*.

1. *A. notochlaena*, Craib, comb. nov.

Didissandra notochlaena, Lévl. et Van. in Compte Rend. Ass.

Fr. (1905), 1906, p. 425.

Didymocarpus notochlaena, Lévl., l.c., p. 428.

Oreocharis notochlaena, Lévl., Fl. Kouy-Tcheou, p. 185.

Kouy-Tcheou, Tsin-gay, Tchao-se, Laborde et Bodinier, 2684!

2. *A. saxatile*, Craib, comb. nov.

Didissandra saxatilis, Hemsl. in Journ. Linn. Soc., xxvi, 227 (1890).

Didymocarpus saxatilis, Lévl. in Compte Rend. Ass. Fr. (1905), 1906, p. 427.

Hu-eph. Wilson, 1584! Patung, Kuei, and Fang, on vertical cliffs, Henry.

Szechuan. S. Wushan, Henry.

var. ? *microcalyx*, Hemsl., l.c.

Szechuan. S. Wushan, Henry.

3. *A. concavum*, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 234 (1919).

Yunnan. Mekong-Yangtze divide, Kari Pass. Lat. 27° 40' N. Alt. 11,000 ft. On trunks of trees and moss-covered boulders

in shady situations. Plant of 4-7 inches. Flowers deep orange. G. Forrest, 12,943! Fl. et Fr. Aug. 1914.

? Mekong-Salwin divide. Lat. $28^{\circ} 10'$ N. Alt. 10,000 ft. On trees and rocks in shady situations. Plant of 3-5 inches. G. Forrest, 13,445! Fr. Oct. 1914.

Yunnan. G. Forrest, 16,634! Fl. et Fr. July 1918.

4. **A. convexum**, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 235 (1919).

Didymocarpus aurea, Diels in Notes Roy. Bot. Gard. Edin., vii, p. 271, non *Roettlera aurea*, Franchet.

Yunnan. Eastern flank of the Tali Range, 9000-10,000 ft. Lat. $25^{\circ} 40'$ N. On humus-covered boulders and trees. Plant of 4-8 inches. Flowers deep ruddy orange. G. Forrest, 7105! Fl. July 1910. 4803! Fl. June-July 1906. 15,483! Fl. et Fr. Aug. 1917. 15,930! Fl. Aug.-Sept. 1917.

Shweli-Salwin divide. Lat. $25^{\circ} 30'$ N. G. Forrest, 17,623! Fl. et Fr. July 1918.

5. **A. Mairei**, Craib, comb. nov.

Didymocarpus Mairei, Lév. in Fedde Rep. Nov. Sp., xi, 301 (1912); id., Cat. Pl. Yunnan, p. 123.

Yunnan. Ma hong, 3000 m., E. E. Maire! Fl. July.

Isometrum, Craib.

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|--|------------------------|
| Filaments glabrous | 1. <i>Farreri</i> . |
| Filaments with glandular hairs | 2. <i>glandulosa</i> . |

1. **I. Farreri**, Craib in Notes Roy. Bot. Gard. Edin., xi, p. 250 (1919).

Oreocharis Henryana, Farrer in Journ. Roy. Hort. Soc., xlii, 87 (1916), non Oliver.

S. Kansu. Very general at low elevations on rather cool rocks and very steep banks of cool clammy soil that grows a fine film of moss. Flowers a pretty shrimp pink with a bronzy tone. Farrer et Purdom, 262! Fl. Aug. 28.

2. **I. glandulosa**, Craib, comb. nov.

Didissandra glandulosa, Batalin in Act. Hort. Petrop., xii, 175 (1892).

N. Szechuan. Potanin. Fl. 17th Aug. 1885.

I have seen no specimens of Batalin's Szechuan species, but

from the description it must be very closely allied to the Kansu plant. Batalin's original description does not, however, apply to Farrer's plant in a few details, and under these circumstances I have decided to keep the two plants separate.

From description alone I would incline to the inclusion in this genus of *Didissandra Fargesii*, Franchet, described from Szechuan plants. The description, however, suggests no points of difference between this plant and *Didissandra glandulosa*, Batalin, unless the slightly longer corolla of the latter.